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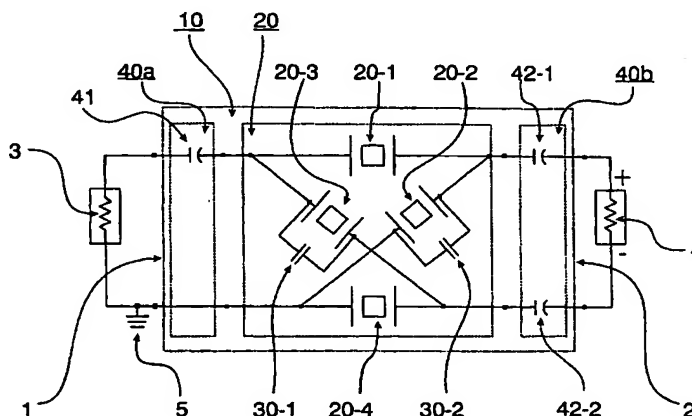
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(54) Title: **RESONATOR FILTER STRUCTURE HAVING EQUAL RESONANCE FREQUENCIES**



(57) Abstract: The invention relates to a resonator filter structure (10) for radio frequency (RF) filters, especially a bulk acoustic wave (BAW) filter structure. According to the invention, a resonator filter structure (10) is constructed with a BAW lattice filter section (20), in which all of the BAW resonator elements (20-1, 20-2, 20-3, 20-4) within the BAW lattice filter section (20) have substantially equal resonance frequencies. According to the invention, there are parallel capacitances (30-1, 30-2) connected in parallel to the BAW resonators (20-2, 20-3) of one branch type of the BAW lattice filter section (20). Thus, anti-resonance frequency of the respective BAW resonator (20-2, 20-3) is tuned. That results in a very narrow passband which corresponds approximately to the difference in anti-resonance frequencies between diagonal and horizontal branches of the lattice filter section (20). The parallel capacitances (30-1, 30-2) are used to tune the bandwidth: the smaller the capacitance, the smaller the bandwidth. Moreover, due to the lattice structure at one port of the resonator filter signal guidance will be balanced while at the other port signal guidance can be unbalanced or balanced according to the application needs.

10/54282

WO 2004/066490 A3



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H03H9/64 H03H9/58 H03H9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, COMPENDEX, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2001/012237 A1 (TANIGUCHI NORIO) 9 August 2001 (2001-08-09) cited in the application paragraph '0050! - paragraph '0053!; figure 1	1-12
A	WO 02/082647 A (AIGNER ROBERT ; INFINEON TECHNOLOGIES AG (DE); NOKIA MOBILE PHONES LTD) 17 October 2002 (2002-10-17) page 6, line 15 - page 8, line 18; figures 3,4	1-12
A	EP 1 104 097 A (NOKIA MOBILE PHONES LTD) 30 May 2001 (2001-05-30) paragraph '0017! - paragraph '0018!; figure 5 paragraph '0020! - paragraph '0021!; figure 7a	1-12

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for information on patent family members

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